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ABSTRACT

A description is given of a course in educational psychology in which students learn to apply the principles of educational psychology in understanding their own learning before they are expected to understand and apply these principles to children's learning. The course focuses on the application of the principles of educational psychology, i.e., conceptual images, self-monitoring, negotiation of meaning, and social interaction. The course objectives are to: (1) understand the difference between learning in school and learning out of school; (2) apply a cognitive learning strategy to the study of educational psychology which is generalizable to other disciplines; (3) develop a knowledge base about the learner and the learning process; and (4) analyze and appreciate one's own learning by applying the cognitive learning strategy and the knowledge base to a prescribed learning experience. The paper offers insights into the reactions of the students to the course and the value of the cognitive dissonance they experienced. (JD)

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TO KNOW OR TO DO: A DISTINCTION BETWEEN CONTENT- AND PERFORMANCE-BASED CURRICULUM FOR EDUCATIONAL PSYCHOLOGY

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Paper presented to the annual meeting of the Midwest Association of Teachers of Educational Psychology, Miami University, Oxford, Ohio, October 6-7, 1989.

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I recently wrote an instructor's guide to a forthcoming educational psychology textbook. I used that opportunity to resurrect some old ideas about the teaching of educational psychology. As I reviewed the material, I was reminded of two familiar questions put to those of us teaching educational psychology and preparing teachers in a liberal arts environment. What are the goals of educational psychology and how is the content related to the goals?

With a little searching among some older literature several themes appeared. Textbooks and curriculum in educational psychology are designed to assist people become effective teachers (cf. Clinefelter, 1979). The material "ought to clarify the prospective teacher's aims, strengthen his critical abilities and attitudes, widen the range of variables he takes into account, and increases his options" (Cronbach, 1977, p. viii).

Just how successful are the principles of educational psychology in improving the effectiveness of teachers? The results from studies of practicing teachers suggested that they rated the helpfulness of educational psychology to be low, even though they recognized the content to be important (Frey and Ellis, 1966; Isakson And Ellsworth, 1979). Is there any difference today? I would like to think so, but the question is open to study.

We probably all agree that educational psychology has a place in professional education curriculum, but what observable differences does taking such a course make in terms of teacher

effectiveness? As early as 1955, questions concerning the relationship between study of the psychological foundations of education and teacher effectiveness were raised (Symonds).

Mastery of concepts in educational psychology seems unrelated to classroom teaching behavior in several research reports. One study reports that certified, experienced teachers were unable to perform better than non-teachers in the ability to promote mastery of prespecified objectives (Popham, 1971). Another study reported that participants in a behavior modification course did little to influence students' ability to apply the theory to a teaching situation (Silverman and Kimmel, 1972). And when knowledge of learning theory was correlated with teachers' classroom behavior, only one out of 13 coefficients were significant, and the one in the opposite direction (Aspy, 1972).

However, caution in interpretation is necessary, because teaching behaviors (which were the dependent variables) only permit inference about students' learning. Teacher behaviors should be supplanted by student learning gains before we become too uncomfortable.

Nevertheless, could it be that the educational psychology class [and possibly the textbook] is where the theories are learned, but not their application (Yee, 1970)? We have all heard that one role of the teaching educational psychologist is to translate theory. However, telling how theory can be applied, or giving good examples of its application is not enough. Modeling the principles of effective teaching, facilitating student's

reflection upon their own learning and providing them with strategies to learn how to learn completes the picture for the role of the educational psychologist. We must shift the focus in our classes from knowing to applying principles. By offering students an opportunity to apply principles in the analysis of their own learning, before they are expected to understand and apply principles to childrens' learning. Shift the learnings emphasis from to know, to, to do.

Cognitive research shows us that people are most effective with and within a complex system when they have a mental model of the system (cf. Gentner and Stevens, 1983). These people are more successful if they have an idea of how all the parts in the system work and how they work together. The mental model is a tool permiting flexibility in responding to unexpected events and situations (Resnick, 1987). Mayer's (1989) recent review of work on models for understanding bridges the gap between educational relevance and research on mental models. Use of models seems to improve conceptual retention, improve problem-solving transfer and reduce verbatim retention.

Furthermore, access to knowledge is improved the better organized or structured the knowledge is (cf. Prawatt, 1989). Organization is largely a function of connectedness. Thus, fostering instructional techniques to connect concepts in some model or schematic form should improve learning and subsequent access.

Finally, the role of negotiating meaning through small group cooperative learning has a positive effect on retention (Yager,

Johnson, and Johnson, 1985). Explaining material to be learned, monitoring other students and correcting when necessary are effective cooperative strategies.

A most useful strategy to enable preservice teachers to understand the learner and the learning process would be to create schemas or networks, negotiate their meaning and reflect upon their learning in light of principles from educational psychology. Grounded in David Ausubel's cognitive learning theory, Novak and Gowin (1984) developed a learning and teaching strategy of constructing schematics of meaningful relationships between concepts. These schematics, or concept maps as they are called, are tools to share, discuss, negotiate and agree upon meaning. The result is a mental model of a "system" (be it cognitive development, classroom management or measurement, etc.) which ought to offer teachers a way to deal with the unpredictability of the classroom "system". This approach presumes that preparing preservice teachers to deal with educational psychology at the knowledge level is inadequate and displays an incomplete model for teaching in general.

Such cognitive rumination drove me to redesign my course based upon two premises.

1) Meaningful learning of educational psychology principles is a process of relating the new knowledge to prior knowledge, feelings and expectations through self-analysis and reflection. What could have better meaning than to relate these principles to their own learning process?.

2) Knowledge is constructed, not discovered or simply given

away. The learning process begins outside of the individual and is recursive, moving almost in the form of a spiral. The transfer can be thought of as interactive, social and jointly created. This Vygotskian view of the development of cognitive functions begins between people in social interaction, then moves "inside of the head" for truly cognitive activity (Brandt, 1989).

My course focuses on the application of the principles of educational psychology, i.e., conceptual images, self-monitoring, negotiation of meaning and social interaction. The course objectives are:

1. Understand the difference between learning in school and out of school.

2. Apply a cognitive learning strategy to the study of educational psychology, which is generalizable to other disciplines.

3. Develop a knowledge base about the learner and the learning process.

4. Analyze and appreciate their [the student's] own learning by applying the cognitive learning strategy and the knowledge base to a prescribed learning experience.

The knowledge base is distilled from the course textbook (Woolfolk, 1987). Eight topic areas are defined: cognitive development, behavioral views of learning (theory and application), cognitive views of learning, cognitive applications to teaching, motivation, standardized testing, and classroom evaluation.

During the first phase of the course, students group

themselves into threes or fours following two class meetings of "icebreaking" activities. One weekly class is a topic overview; the next class is small group discussion, questions and identification of key concepts; the third class of the week is negotiation of a final group concept map. The draft of individuals' map and the final group product are submitted. Only the group map is evaluated, according to my condensation of the criteria outlined by Novak and Gowin (p. 36-37). See copies of group maps in Appendix A.

The second phase of the course entails analysis of some aspects of their learning: the task is learning to word process.

> [The problem here is that even now this task is becoming less novel, as more students know how to word process. I am thinking of moving next to another computer applications task. Suggestions would be most welcome.]

Students may work in the same group or individually, but individually maintain a log of their learning. They record their prior knowledge, achievements, expectations (success and failure), feelings, intra-group dynamics and beliefs. They annotate the log with supporting theory, principles and research from the textbook. The final product is a paper (word processed of course) describing how their learning, as documented in the log, is supported, explained or clarified by educational psychology principles. I select the concepts and principles from which they may choose.

Evaluation for the course covers formative, summative and long-term application procedures.

Formative evaluation includes:

1) Eight maps, one for each of the eight topic areas from each group.

2) My informal assessment as I interact with each group.

Summative evaluation will include:

1) An individually-developed concept map from a reading passage on a topic germane to educational psychology. This activity will take place during normally scheduled final exams.

2. The synthesis paper describing their learning with respect to research and principles from educational psychology.

Long term evaluation planned will include:

1. Surveying the students to determine the extent of mapping use in other courses and during their student teaching.

2. Maintaining a "special interest group" of students who wish to continue studying and using this and other metacognitive strategies.

After five weeks, I administered a course evaluation instrument. The results were generally very positive. Eleven open ended questions were asked of of 33 of the 34 students in both sections of my course. The responses were organized and coded according to five categories: 1) strong positive, 2) positive, 3) conditional positive or positive with reservations, 4) negative, 5) strong negative. These were condensed further into three categories: positive, conditional positive and negative. See Table 1 for a percentage breakdown of

student responses to the instrument items. In summary, students had very positive statements to these items:

1. The course is well organized.

   E.g., "The course is definitely well organized. We all understand what is due and when. There is no confusion as to what to do on a day-to-day basis."

   "Yes, but it does seem impossible to get all the work done on the syllabus in such a short time."

2. Professor is knowledgeable of the subject.

   E.g., "Yes, he definitely knows and inordinate amount about the subject matter. This is very clear."

   "Yes, he is at times overly knowledgeable and tries to teach at a higher level than where the class is, but he is working his way down."

3. Professor communicates the subject in an enthusiastic way. E.g., "Yes, lessons and prof are enthusiastic, gets students involved."

   "Yes, never problems paying attention or staying interested. Lots of action."

   "Yes, I never feel bored. He's excited and upbeat. Excellent job in this area."

4. The class meetings are helpful in achieving the objectives. E.g., "Definitely! The 'input and output' of others - their views- helps me tremendously. Sometimes I feel (when I do work on my own) that I'm missing something. I can usually pick this up in class."

"Yes, working together in our group with you available to answer questions helps a lot."

5. Students are challenged by the course.

E.g., "Yes, first time in 3 years of college that 'm challenged and want to learn. I don't dread doing homework, I like the assignments, ca.'t wait to come to class".

"Yes I feel that I am challenged to become a teacher in this class."

6. They enjoy and find the small group work helpful.

E.g., "The small group work is great because you learn to take four different opinions and combine them to form a happy medium. I an not sure if I would change anything about the group work, I feel it is helpful."

"The small groups work well. It gives me a little more insight - I get to see how others think and feel and compare it to my own feelings and thoughts. Many people learn in many different ways and its fun to see how we can learn the same thing in a differnent way."

7. They feel that there is adequate student involvement.

E.g., "I think there is plenty of student involvement. I feel free in class to say anything that may need said or ask any question I may need to ask. The learning environment is not lecture it is participation. I like that."

"Some days. Students do not feel comfortable enough with the info in the chapter to volunteer answers! We

do not enjoy being 'on the spot."

Responses with more conditional positive statements were:

1. The objectives are clear.

E.g., "The course objective were at first a little foggy only because we aren't used to 'alot' of this type of learning. We are used to being 'fed' information which is sad if your really think about it."

"The idea of the concept map itself is clear, but the purpose of doing it doesn't exist. There is no meaning or learning behind it. It is just seting up information and doing nothing with it."

2. Learning tasks and course requirements are clear.

E.g., "You are very clear in your presentation of requirements, however, it was a little confusing to begin with because I was dealing with a totally new method of learning, so understanding your requirements and your expectations are two diferent things entirely."

Responses with the most critical comments were:

1. Students are achieving the course objectives.

E.g., "To some extent, yes. I can make my own meaning, but I cannot put them on paper as required. I also have not gotten used to working with someone else."

"I am trying to achieve the course objectives as best as I can. It's tough in a way - everything is 'kind of'

new. Now so much contentwise, but how we are going about learning it."

2. Explanations in class are clear.

E.g., "Sometimes. I'm not exactly sure what you want, but after asking questions I feel more confident."

"It takes more time to get things across than normal, but eventually they are clear."

The results suggest that students are experiencing beautifully, classical cognitive dissonance. They view the course as well organized; they view the teaching as good quality, they are challenged; the class meetings and small group work are supportive in their learning efforts. Nevertheless, they are not completely sure about how well they are achieving the objectives; they are uncomfortable with the learning tasks and the relationship between the tasks and objectives and between the objectives and educational psychology. They are not used to this instructional methodology and would prefer being "fed the information" as one student put it.

I sense a need slow the pace a bit and possibly temper the level of concern, review more and continue to be sensitive to an instructional method that is foreign to most students. But in no way should I back off on the cognitive dissonance. Teachers must experience "felt significance" as an essential element of the value of education (cf. Novak and Gowin). They must work through dissonance --- the essence of higher level learning --- and develop at least one metacognitive strategy prior to taking on

the teaching responsibility themselves.

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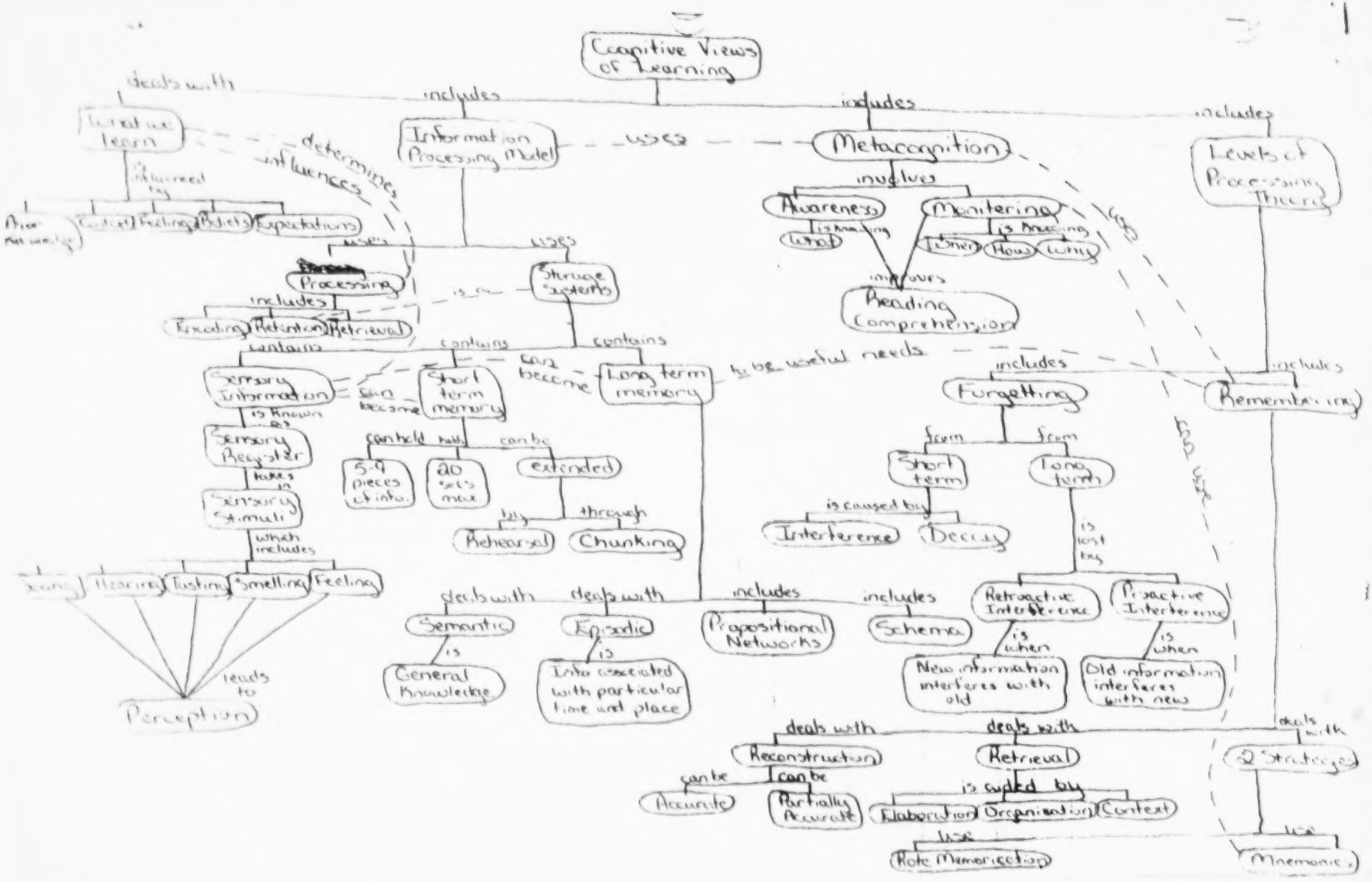
Table 1. SUMMARY OF MIDTERM COURSE EVALUATIONS FOR EDUCATIONAL PSYCHOLOGY

Questions	Total	Ratings: Positive	Conditional Positive	Negative
Course is well organized.	30	22	7	
	100%	77%	23%	
Objectives are clear.	30	18	11	1
	100%	60%	37%	3%
Learning tasks & requirements are clear.	31	16	15	
	100%	52%	48%	
Are you achieving the objectives?	32	12	15	5
	100%	38%	47%	16%
Class meetings are helpful in meeting objectives.	33	23	10	
	100%	70%	30%	
Explanations in class are clear.	31	12	19	
	100%	39%	61%	
The professor is knowledgeable.	33	29	4	
	100%	88%	12%	
Subject is communicated in enthusiastic way.	33	31	2	
	100%	94%	6%	
Are you challenged?	32	25	6	1
	100%	78%	19%	3%
Small group work is enjoyable and helpful.	33	24	9	
	100%	73%	27%	
There is adequate student involvement.	31	22	9	
	100%	71%	29%	
TOTAL	349	235	107	7
	100%	67%	31%	2%

APPENDIX A

APPENDIX A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Encoding
Retention
Retrieval
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to be useful needs
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Sensory information
can become
Short term memory
Long term memory
Forgetting
Remembering
is known as
Sensory Register
can hold only
can be
can be
takes in
5-9 pieces of info.
20 secs max
extended
Sensory Stimuli
which includes
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Rehearsal
Chunking
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Tasting
Smelling
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deals with
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Proactive Interference
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Episodic
Propositional Networks
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New information interferes with old
Old information interferes with new
General Knowledge
Info associated with particular time and place
leads to
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